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DATE: June 7, 2007

TO: Examiner V. Bali
Group Art Unit 2624
FAX #: 571-273-8300

PHONE #:

Application No.: 09/542,091 OUR REF.: 4062.14US01
Applicant: Jose de la Torre-Bueno
Due Date: June 7, 2007

FROM: Paul B. Savereide, Esq.
PHONE #: 612-252-1550

Attached please find the following for filing in the above-identified application:

(1) Revised Appeal Brief.

Respectfully submitted,

Paul B. Savereide
Registration No. 36,914

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this paper is being transmitted by facsimile to the U.S. Patent and Trademark Office, Fax No. 571-273-8300 on the date shown below.

June 7, 2007
Date

Paul B. Savereide

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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:	Attorney Docket No.: 4062.14US01 (formerly 10225-023001)
Jose de la Torre-Bueno	Confirmation No.: 4964
Application No.: 09/542,091	Examiner: V. Bali
Filed: May 3, 2000	Group Art Unit: 2624

For: REMOTE INTERPRETATION OF MEDICAL IMAGES

REVISED APPEAL BRIEF UNDER 37 C.F.R. § 41.37

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Revised Appeal Brief is being filed in response to Notification of Non-Compliant Appeal Brief (37 CFR 41.37) mailed May 7, 2007. This Revised Appeal Brief is further presented in support of the Notice of Appeal to the Board of Patent Appeals and Interferences, filed January 3, 2007, from the final rejection claims 31-43, and 33-45, as set forth in the Final Office Action of September 1, 2006.

Please grant any extension of time necessary for entry; charge any fee due to Deposit Account No. 16-0631.

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June 7, 2007
Date

Paul B. Savereide

TABLE OF CONTENTS

I. REAL PARTY IN INTEREST (37 C.F.R. § 41.37(c)(1)(i)).

The application is assigned to Carl Zeiss MicroImaging AIS, Inc., who is hence the real party in interest in this case.

The application was assigned from the previous assignee of record, Clarient, Inc., to Zeiss Mercury, Inc., whose named has since been changed to Carl Zeiss MicroImaging AIS, Inc. The assignment from Clarient, Inc. to Zeiss Mercury, Inc. (Carl Zeiss MicroImaging AIS, Inc.) has not been recorded with Patent and Trademark Office.

II. RELATED APPEALS AND INTERFERENCES (37 C.F.R. § 41.37(c)(1)(ii)).

There are no known related appeals and/or interferences.

III. STATUS OF CLAIMS (37 C.F.R. § 41.37(c)(1)(iii)).

Claims 31-43 stand rejected, remain pending, and are the subject of the present Appeal.

Claims 1-30 have been cancelled.

IV. STATUS OF AMENDMENTS (37 C.F.R. § 41.37(c)(1)(iv)).

A response to the Final Office Action was filed on January 3, 2007. No claim amendments were made in the January 3, 2007 response. An advisory action mailed January 23, 2007 indicating that the amendment was not persuasive.

V. SUMMARY OF CLAIMED SUBJECT MATTER (37 C.F.R. § 41.37(c)(1)(v)).

Claim 31 defines obtaining an original medical image at a first location to be evaluated by a medical person. See, for example, page 3 line 28 through page 4 line 4 of the specification. The image acquisition devices 14 may generate the medical images. This is done at a first location.

Claim 31 requires compressing the image to create a compressed image. See page 4 lines 25-28. Claim 31 requires sending that compressed image to the second location where there is an evaluating professional. See remote view station 26, and specifically page 4 of the specification lines 26-28. Claim 31 further requires allowing selection at the remote region, and sending an indication of that region to the first location. See page 5 lines 6-16. The medical analysis according to Claim 31 is done on the original medical image at the first location.

Claim 36 requires an image server that obtains an original medical image representing medical information. See page 3 line 28 through page 4 line 4. Claim 36 requires a remote view station at a second location. See the remote view station 26, page 4 of the specification lines 26-28. Claim 36 further requires carrying out a medical analysis based on the contents of the original medical image; see page 5 lines 6-16.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL (37 C.F.R. § 41.37(c)(1)(vi)).

A. Whether claims 31, 33-37, and 40 are unpatentable under 35 U.S.C. §103(a) over U.S. Patent No. 5,432,871 to Novik ("Novik").

B. Whether claim 32 is unpatentable under 35 U.S.C. §103(a) over Novik in view of U.S. Patent No. 5,851,186 to Wood et al. ("Wood et al.")

C. Whether claims 38-39 and 41-43 are unpatentable under 35 U.S.C. §103(a) over Novik in view of U.S. Patent No. 5,740,267 to Echerer et al. ("Echerer et al.").

VII. ARGUMENT (37 C.F.R. § 41.37(c)(1)(vii)).

A. REJECTION OF CLAIMS 31, 33-37, and 40 UNDER 35 U.S.C. § 103(a) OVER NOVIK.

Claims 31, 33-37, and 40 stand rejected under 35 USC 103 as allegedly being unpatentable over Novik. This contention is respectfully traversed, and for reasons set forth herein, the rejection does not meet the patent office's burden of providing a prima facie showing of unpatentability.

Claim 31 defines obtaining an original medical image, and sending a compressed version of that image from a first location to a second location. An evaluating person at the second location selects a region of the compressed medical image which is less than the entire image. An indication of that region is sent back to the first location. Medical analysis of the original medical image is carried out at the first location. In this way, the original medical image need never be sent outside the first location.

An advantage of this technique is that the original medical image can be processed at the original medical location. The image does not need to be copied and/or sent. The original medical image can be of any size, since it does not need to be copied or sent.

However, even though the original image is reviewed at the original location, a human can still review and evaluate a compressed version of the image to look for indications of suspicious looking areas.

Consider an advantage of this system. This advantage is inherent within the subject matter defined by Claim 31. An original medical image can be extremely large. For example, consider a bitmap image, 16 bit, color, having a resolution comparable to high definition television: 1920 by 1280. Such an image would require 1920 x 1280 x 16 x 3 bits or 117,964,800 bits; 14,745,600 bytes. Since medical imaging requires high precision, one might want 32 bit color or even more. This means that the image that can be obtained could easily be 50MB.

While certain advantages might be obtainable from such a large image, many feel it impractical to send an image of that size from one location to another. Accordingly, the prior art typically does not use images this large; either they use fewer bits of resolution, or they compress or reduce them in size.

The present inventor, however, realizes that a human observer could easily analyze a compressed image to look for suspicious locations. While it may be advantageous to use all of the possible detail, even pixel by pixel, once suspicious locations are identified, the uncompressed image may be tine for determining a position that is suspicious. However, once the suspicious location is identified, you may want to look pixel by pixel at the original uncompressed image.

Many of these details, such as the size of the image, and the fact that it is possible to look at a compressed image to find suspicious locations, are not expressly recited in the claims. However, this advantage is certainly inherent within the claims which define that a selection of a region of the compressed medical image is selected at the second location, and an indication of that region is sent to the first location. The claims also define that a medical analysis is carried out of only the region of the medical image at the first location and "based on contents of the original medical image". Whether that image is one MB or one GB, it is easy to carry out the analysis on the original medical image.

When an extremely high-resolution image is obtained, that image may be many megapixels, and sending that image to a remote location may take large amounts of bandwidth. The inventors found that it makes much more sense to analyze the image at the original location where the original medical image has first been stored. The original medical image is never sent out: it is analyzed at the first location.

Having seen the advantage of this system, it will be shown now that this is not shown by the prior art. Novik does not teach medically analyzing the area IN THE ORIGINAL

IMAGE. The rejection makes an argument about why it would be obvious for Novik to do so. However, note that this is contrary to Novik's teaching. Everything in Novik teaches sending its image data to a second location for analysis.

See, for example, column 5 lines 29-31, which specifically states that the image data provided "represents an image which is to be collected at one location and transmitted to another location for analysis". (Emphasis added)

Novik explains that a medical image can be compressed and resolution can be varied. See column 5 lines 53-56. Column 6 line 59-63 explain that a user can zoom in undesired subparts of the total image to resolve a part of that image in greater detail. However, all this is described as being done over the image data channel 106. Novik describes that this channel is a "fast and accurate channel". Still, the disadvantages of sending the image, all described above, could occur in Novik. Novik does teach that the image is compressed, and that more details could be obtained from the image, but nothing in Novik discloses or teaches the claimed subject matter of the medical analysis "being based on the contents of the original medical image" and "at said first location", where the first location is a location where the original medical image is obtained. The official action dated September 1, 2006 stated that an argument was made that Novik sends all the image data to a second location. See page 2 of the official action, last full paragraph. With all due respect, this misses the point: the point being that the analysis is carried out at the second location. All of the analysis is carried out at the second location. There is no teaching or suggestion in Novik of carrying out the analysis at the first location, based on the contents of the original image.

The idea of Novik is that an area of interest in the image can be found, and then after finding that area of interest in the image, more detail about that area can be sent back to the remote area. See, for example, Novik's column 10 lines 38-57. Novik teaches sending the image to a second area to be processed. Novik has no teaching or suggestion of Claim 1,

which requires analyzing the area of interest in the second location (in some claims the "remote view" location) and then calculating the medical analysis at the first location based on the contents of the original medical image. Claim 1 carries out the detailed analysis at the first location, and the original medical image is used: it is not a second-generation copy, and has never been transmitted over a network. Therefore the possibility of any distortion in the image is minimized. Moreover, the original medical image can be as large as desired. No bandwidth limitations make any difference, since the original medical image is the one on which the medical analysis is carried out. The latter step -- of carrying out the evaluation at the first location based on the contents of the original medical image -- is entirely and wholly different than anything that is taught, suggested, or disclosed by Novik.

Novik teaches that all image analysis is carried out at the remote location.

Once a proper portion of the image has been selected, additional image information may be sent to the remote location for analysis; see Novik's column 10 lines 38-47. Novik's column 10 lines 49-57 describes that the original, image data can be sent. Column 10 lines 58-65 of Novik described decompressing the image to determine which pixels may be displayed incorrectly. In all of these features, however, the image information is sent to the remote location for analysis.

Again, note the technical distinction of Claim 31. Claim 31 recognizes that no matter how much care is taken in sending image data, it is still a transmission. Any transmission includes the possibility of transmission error. The detailed analysis, which is the analysis that is finally carried out on the identified area, is carried out on the original medical image at the original location. Claim 31 allows that image to be selected at the remote location to select a region less than the entire image. Information indicative of that region is sent back to the original location. This is not taught or suggested by Novik, and this claim should be allowable for these reasons.

Claim 36 should be allowable for reasons discussed above. Specifically, Claim 36 defines an image server that obtains an original medical image, sends a compressed version to a second location to be evaluated by a person and that the person selects a region to be analyzed further, and then analyzes the identified portion of the original medical image; again at the first location. The present claims enable a system where the original medical image need never leave the first location. The present claims enable a system where a pixel-by-pixel analysis with a maximum probability of being correct can be carried out. The claimed subject matter is not taught or suggested by the cited prior art, and should be allowable. This takes advantage of the fact that uncompressed images can be read by a human, and therefore the human can identify regions of interest in the compressed image. However, the original image is used to obtain the maximum probability of successful analysis of the original image.

B. REJECTION OF CLAIM 32 UNDER 35 U.S.C. § 103(a) OVER NOVIK AND WOOD.

Claim 32 was rejected over Novik in view of Wood et al. Claim 32 should be allowable by virtue of its dependency.

C. REJECTION OF CLAIMS 38-39 and 41-43 UNDER 35 U.S.C. § 103(a) OVER NOVIK AND ECHERER.

Claims 38-39 and 41-43 stand rejected based on Novik in view of Echerer et al. This contention is respectfully traversed. Claim 38 specifies that the image server generates a score at the local location and sends that score to the remote location.

While Echerer et al. does teach analyzing an x-ray image, it teaches nothing about using an uncompressed image to analyze regions of interest at a remote view station, and then analyzing only the identified region of interest on the original medical image to find a score. Presumably Echerer et al. would score the entire image, and as such would not pay as much attention to the area of interest. The subject matter of Claim 38 is entirely backwards compared to that in Novik in view of Echerer et al. Novik, in view of Echerer et al. has no

teaching or suggestion of sending the score to the remote view location based on an analysis of the original image.

Claim 39 should be allowable for similar reasons: there is no teaching or suggestion of such a database in combination with the subject matter discussed above.

Claim 41 defines that the computer automatically processes the original medical image to calculate the score. As described above, nothing in the prior art processes the original medical image in any way, much less to calculate the score. Claims 42 and 43 should be allowable for analogous reasons.

The applicant also notes the Examiner's request in the advisory action, requesting evidence to support that compressed and uncompressed images look the same to a human observer. This is presumably based on the fact that the undersigned stated this in an amendment, and presumably, therefore, it was unsubstantiated arguments of attorney. However, upon reviewing the specification, it was noticed that this language was also in the specification, which itself was supported by a declaration signed by the inventor. See, for example, the present specification page 5 lines 2-5 which support this statement. Hence, since this statement is supported by the specification, it is not an unsubstantiated statement of attorney.

The remainder portion of the statements in the advisory action is respectfully suggested to be based on failure to read and/or understand applicant's statements in the previous remarks section. The statements in the advisory action seem to state that our previous attempt to distinguish the claims from the prior art is an "inconsistency". In fact, those statements evaluated the scope of the prior art, and the scope of the claims, Of course, the claims were "inconsistent" with the prior art. This is not an inconsistency, but rather is a statement of the difference between the scope of the prior art and the scope of the claims.

The statements in the advisory action allege that applicant's statement that "applicant is intending to say that whatever data is going to be evaluated is done at a remote location" is somehow inconsistent with the other remarks in the amendment. However, those "other remarks" are directed to the scope of the claims, not the scope of the prior art. The statement that all evaluation is done at the first location is clearly directed to Novik, and applicant fails to see how anyone reading that paragraph could make any contrary interpretation of that paragraph. Page 2 of the previous remarks, last paragraph on the page quite clearly states that this discussion is about Novik. It says that all of the image data is sent to the remote location in Novik. This is crystal clear from the language in that amendment, and the statements in the advisory action appear to be based on simply not reading or understanding the language in those remarks.

The alleged "inconsistency" is based on our later discussion about our claims. Our claims do in fact have things that are different than Novik. Our arguments point out how the claims say something different than the prior art.

The rejection totally misses the point that Applicant was attempting to explain the difference between the present invention and the prior art. The statement, in effect, says that applicant is contradicting its statements by explaining how the prior art operates differently than the present invention. This cannot be supported.

VIII. CLAIMS APPENDIX (37 C.F.R. § 41.37(c)(1)(viii)).

1-30. (Cancelled)

31. A method, comprising:

obtaining, at a first location, an original medical image representing medical information to be evaluated by an evaluating person;

compressing the original medical image to form a compressed medical image, at the first location;

sending the compressed medical image from the first location to a second location, at which second location the evaluating person is located;

allowing selection of a region of the compressed medical image at the second location, which region is less than the entire compressed medical image, and sending an indication of that region to the first location; and

carrying out a medical analysis of only the region of the medical image at said first location, said medical analysis being based on the contents of the original medical image that are within the region selected by the evaluating person.

32. The method of claim 31, wherein said sending the compressed medical image includes transmitting the compressed medical image over a global packet-switched network.

33. The method of claim 31 wherein said second location includes a remote view station and further including transmitting said indication from the remote view station to an image server, wherein the region information defines the selected region of the displayed medical image.

34. The method of claim 33, wherein the indicator is transmitted as a series of pixel coordinates.

35. The method of claim 31, wherein said allowing selection selecting the region of the compressed medical image includes receiving input from a pointing device controlled by a user to outline the region of the compressed medical image.

36. A system comprising:

an image server, at a first location, obtaining an original medical image representing medical information to be evaluated by an evaluating person;

said image server including an image compression part which compresses the image to form a compressed medical image, and including a network communicating part which communicates the compressed medical image over a network;

a remote view station at a second location, including a network communicating part receiving said compressed medical image, a viewing part enabling said image to be viewed, and enabling a region of said image to be selected, where information indicative of said region is sent back to the image server;

wherein the image server also includes a medical analysis part at said first location, which enables carrying out a medical analysis of only the region of the medical image, based on the contents of the original medical image, that are within the region that was selected.

37. The system of claim 36, wherein the remote view station transmits region information separate from the compressed medical image from the remote view station to the imaged server, wherein the region information includes a plurality of pixel coordinates outlining the selected region the compressed image.

38. The system of claim 36, wherein the image server applies the image analysis operations to generate a score and communicate the score to the remote view station for display.

39. The system of claim 36, wherein the image server includes a database associating a diagnosis received from the remote view station with the source medical image.

40. The system of claim 36, wherein the remote view station includes a pointing device controllable by a user to outline the region of the compressed medical image.

41. The system as in claim 38, wherein said medical analysis part is a computer which automatically processes the original medical image to calculate said score.

42. The system as in claim 31, wherein said carrying out a medical analysis comprises using the computer to automatically process the original medical image at its original location.

43. The system as in claim 42, wherein said carrying out a medical analysis comprises automatically forming a score indicative of the image, and sending said score to the second location.

IX. EVIDENCE APPENDIX (37 C.F.R. § 41.37(c)(1)(ix)).

None.

X. RELATED PROCEEDINGS APPENDIX (37 C.F.R. § 41.37(c)(1)(x)).

None.

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XI. CONCLUSION.

Claims 31-43 are patentable over the references of record. Thus, Appellant respectfully requests the reversal of the rejections of claims 31-43 and the allowance of all pending claims.

Respectfully submitted,

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